

REMARKS

Claims 1-22 are presently pending in the patent application. Claims 16 and 19 are amended herein to correct grammatical errors. The scope of claims 16 and 19 is unchanged. Claim 22 has been added.

I. THE 35 U.S.C. § 102 REJECTION

Claims 1, 7 and 13-16 were rejected under 35 U.S.C. § 102b as being anticipated by U.S. Patent Number 5,370,575 by Geib *et al* (hereinafter “Geib”). This rejection is traversed. Reconsideration and withdrawal of this rejection is respectfully requested.

Geib discloses the use of a lubricant. However, this lubricant is not a “durable solid lubricant,” as recited in the claims. Instead, the lubricant disclosed by Geib appears to be a semi-liquid greasy or waxy material (e.g., a grease or wax may be made with varying degrees of fluidity, based on the addition of thickeners and may come in the form of a stick or “solid” grease), rather than a durable solid material. As noted by Geib, “[t]he lubricant *should also be soft enough* that it can be removed from the dimples by passing coins” (col. 7, lines 48-50)(emphasis added).

Geib states that “[t]he dimples 100 may be filled with the lubricant by rubbing a solid stick of the lubricant back and forth across the dimpled surfaces so as to fill with dimples 100 with lubricant and, at the same time, coat the surfaces surrounding the dimples 100” (col. 7, lines 15-21). Geib further teaches that “[a]s coins slide over the dimpled surfaces of the sorting head, minute mounts of the lubricant are dragged from the dimples onto the passing coins” and that “[a] portion of this lubricant is then transferred from the coins to the solid surfaces of the sorting head that engage the coins.” (col. 7, lines 32-36). Geib further teaches that “[t]he lubricant is replenished from time to time, preferably at intervals measured by the number of coins processed by the sorter” and that “[o]ne way to replenish the lubricant is to simply rub a solid stick of the lubricant back and forth across the dimpled surfaces.” (col. 7, lines 40-44).

The claimed durable solid lubricant (see, e.g., par. [0028]-[0030]) is characterized by a resistance to degradation. In contrast, the lubricant of Geib is characterized by flow of the waxy or greasy lubricant to the conveyed coins.

The Examiner cites *MERRIAM-WEBSTER'S COLLEGIATE DICTIONARY*, 10th Ed. (hereinafter “the Dictionary”) as providing a definition for the term “durable,” which the Examiner alleges is

defined as being “able to exist for a long time without significant deterioration.” However, during patent examination, the pending claims must be “given their broadest reasonable interpretation consistent with the specification.” The Federal Circuit’s *en banc* decision in *Phillips v. AWH Corp.*, 415 F.3d 1303, 75 USPQ2d 1321 (Fed. Cir. 2005) expressly recognized that the USPTO employs the “broadest reasonable interpretation” standard, stating that “[t]he Patent and Trademark Office (‘PTO’) determines the scope of claims in patent applications not solely on the basis of the claim language, but upon giving claims their broadest reasonable construction ‘in light of the specification as it would be interpreted by one of ordinary skill in the art.’ *In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1364 (Fed. Cir. 2004).” *See also, e.g., V-Formation, Inc. v. Benetton Group SpA*, 401 F.3d 1307, 1310 (Fed. Cir. 2005) (intrinsic record “usually provides the technological and temporal context to enable the court to ascertain the meaning of the claim to one of ordinary skill in the art at the time of the invention”); *Unitherm Food Sys., Inc. v. Swift-Eckrich, Inc.*, 375 F.3d 1341, 1351 (Fed. Cir. 2004) (proper definition is the “definition that one of ordinary skill in the art could ascertain from the intrinsic evidence in the record”).

The specification is, thus, the primary basis for construing the claims. *See, e.g., Standard Oil Co. v. Am. Cyanamid Co.*, 774 F.2d 448, 452 (Fed. Cir. 1985). The courts have repeatedly reaffirmed this point, stating that the best source for understanding a technical term is the specification from which it arose, informed, as needed, by the prosecution history. *See, e.g., Metabolite Labs., Inc. v. Lab. Corp. of Am. Holdings*, 370 F.3d 1354, 1360 (Fed. Cir. 2004) (“In most cases, the best source for discerning the proper context of claim terms is the patent specification wherein the patent applicant describes the invention.”); *Kinik Co. v. Int’l Trade Comm’n*, 362 F.3d 1359, 1365 (Fed. Cir. 2004) (“The words of patent claims have the meaning and scope with which they are used in the specification and the prosecution history.”). *See also Bates v. Coe*, 98 U.S. 31, 38, 25 L. Ed. 68, 1879 Dec. Comm’r Pat. 365 (1878) (“in case of doubt or ambiguity it is proper in all cases to refer back to the descriptive portions of the specification to aid in solving the doubt or in ascertaining the true intent and meaning of the language employed in the claims”); *White v. Dunbar*, 119 U.S. 47, 51, 30 L. Ed. 303, 7 S. Ct. 72, 1886 Dec. Comm’r Pat. 494 (1886) (specification is appropriately resorted to “for the purpose of better understanding the meaning of the claim”); *Schriber-Schroth Co. v. Cleveland Trust Co.*, 311 U.S. 211, 217, 85 L. Ed. 132, 61 S. Ct. 235, 1941 Dec. Comm’r Pat. 802 (1940) (“The claims of

a patent are always to be read or interpreted in light of its specifications.”); *United States v. Adams*, 383 U.S. 39, 49, 15 L. Ed. 2d 572, 86 S. Ct. 708, 174 Ct. Cl. 1293 (1966) (“It is fundamental that claims are to be construed in the light of the specifications and both are to be read with a view to ascertaining the invention.”).

Although extrinsic evidence, such as the Dictionary, “can shed useful light on the relevant art,” courts deem extrinsic evidence, in view of the above, as being “less significant than the intrinsic record in determining ‘the legally operative meaning of claim language.’” *C.R. Bard, Inc. v. U.S. Surgical Corp.*, 388 F.3d 858, 862 (Fed. Cir. 2004), quoting *Vanderlande Indus. Nederland BV v. Int’l Trade Comm’n*, 366 F.3d 1311, 1318 (Fed. Cir. 2004); *Astrazeneca AB v. Mutual Pharm. Co.*, 384 F.3d 1333, 1337 (Fed. Cir. 2004).

Indeed, the Federal Circuit’s *en banc* decision in *Phillips v. AWH Corp.*, *supra*, stated that “[i]n sum, extrinsic evidence may be useful to the court, but it is unlikely to result in a reliable interpretation of patent claim scope unless considered in the context of the intrinsic evidence.” Here, the Examiner has improperly taken the definition lifted from the Dictionary out of the context of the intrinsic evidence. The Examiner must give the claims their broadest reasonable construction in light of the specification as it would be interpreted by one of ordinary skill in the art.

The Examiner alleged that “the durability of both the lubricants of Geib and the Applicant are limited” and that “in order for the lubricant of Geib to be effective it must be able to exist without significant degradation for a long enough time to permit prolonged periods of operation of the apparatus.” From this, the Examiner concluded that, “[t]herefore, the lubricant of Geib is durable and reads on the Applicant’s claims.” However, Geib discloses, as previously noted, that “[t]he lubricant is replenished from time to time” and that “[o]ne way to replenish the lubricant is to simply rub a solid stick of the lubricant back and forth across the dimpled surfaces” (col. 7, lines 40-44) and that “[t]he lubricant should also be soft enough that it can be removed from the dimples by passing coins, small quantities at a time” (col. 7, lines 48-50). Thus, the lubricant of Geib has not been shown to be “able to exist for a long time without significant deterioration.” Instead, Geib discloses replenishment of the lubricant at an unspecified interval by the simple operation of rubbing a lubricant stick over the dimpled surfaces, an operation that would likely take only a matter of seconds. The Examiner is improperly assuming numerous facts not established by the record including that the Geib

lubricant is (1) sufficient “to exist without significant degradation,” (2) for a “long enough time,” (3) to permit “prolonged periods of operation”). For example, the Examiner has not shown how Geib shows, in fact, that the lubricant disclosed therein is sufficient for “prolonged periods of operation” “without significant degradation” when, in fact, Geib disclose that the lubricant is “*soft enough* that it can be removed from the dimples by passing coins” (col. 7, lines 48-50)(emphasis added). The Examiner is required to point to “page and line” of a reference wherein each feature of a claimed invention is asserted to reside. *In re Rijckaert*, 9 F.3d 1531 (Fed. Cir. 1993); *Lindemann Maschinenfabrik GMBH v. American Hoist & Derrick Co.*, 730 F.2d 1452 (Fed. Cir. 1984). For at the above reasons, Applicant traverses this apparent taking of Official Notice of such alleged facts.

In the present case, the Applicant’s specification discloses that “[t]o guard against the degradation of the sorting head 300 due to coin impact and abrasion, an underside 302 of the sorting head 300 is mechanically and/or chemically treated to improve the resistance of the sorting head 300 to wear and tear associated with coin impact and abrasion.” (page 8, par. [0028]). As further disclosed, “[o]ne type of material that may be applied to the underside of the sorting head is a solid lubricant 320,” which, according to one embodiment, comprises applying a coating or layer of MicroBlue® to the sorting head 300. (pages 8-9, par. [0028]). In such example, “[t]he MicroBlue® coating is durable having an operating range of about –400 °F to about +1000 °F (about –240 °C to about +538 °C), and it can withstand load forces in excess of 300,000 pounds/in² (psi) (about 2,068 megapascals).”

Applicant submits that, when the claim recitation “durable solid lubricant” is given its broadest *reasonable* construction, in light of the specification, by one of ordinary skill in the art, such person would not construe the recited “durable solid lubricant” to comprise the “Door-Easy” lubricant disclosed by Geib. *See Irdeto Access, Inc. v. Echostar Satellite Corp.*, 383 F.3d 1295, 1300 (Fed. Cir. 2004) (“Even when guidance is not provided in explicit definitional format, the specification may define claim terms by implication such that the meaning may be found in or ascertained by a reading of the patent documents.”)(citations omitted); *Novartis Pharms. Corp. v. Abbott Labs.*, 375 F.3d 1328, 1334-35 (Fed. Cir. 2004) (citations omitted); *Bell Atl. Network Servs., Inc. v. Covad Communications Group, Inc.*, 262 F.3d 1258, 1268 (Fed. Cir. 2001) (“[A] claim term may be clearly redefined without an explicit statement of redefinition.”).

Under the law of anticipation, “[f]or a prior art reference to anticipate in terms of 35 U.S.C. § 102, every element of the claimed invention must be identically shown in a single reference. *Diversitech Corp. v. Century Steps, Inc.*, 7 USPQ2d 1315, 1317 (Fed. Cir. 1988) (emphasis added). Moreover, “[t]he identical invention must be shown in as complete detail as is contained in the . . . claim”. *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236 (Fed. Cir. 1989). In view of the above, it is respectfully submitted that Geib fails to identically disclose (or suggest) the subject matter recited in claims 7, 12, and 13-16 and fails to anticipate these claims under 35 U.S.C. § 102. Reconsideration and withdrawal of this rejection is requested.

II. THE 35 U.S.C. § 103 REJECTION OF CLAIMS 2, 3, 8, AND 9

Claims 2, 3, 8, and 9 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Geib in view of US 6,977,096 B2 to LeClaire. This rejection is traversed. Reconsideration and withdrawal are requested.

Geib is acknowledged not to disclose a lubricant comprising tungsten disulphide particles. LeClaire is alleged to disclose the application of a lubricant comprising tungsten disulphide particles 30 onto ferrous and non-ferrous substrates (col. 1, lines 18-30) for the purpose of enhancing the lubricity of the substrate. The “lubricant” of LeClaire is said to have a thickness equal to about one tungsten disulphide particle (col. 5, lines 4-8) which the Examiner alleges to have a thickness of about one micron. The Examiner further alleges that “[s]aid particles are deposited into dimples 28 that are sized to correspond to said particles” (*citing* FIG. 3). The Examiner alleges that it “would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the tungsten disulphide lubricant of LeClaire into the device of Geib for the purpose of enhancing the lubricity of substrate 12.”

As noted above, Geib does not disclose or suggest the use of a “durable solid lubricant,” as recited in the claims. Instead, the lubricant disclosed by Geib appears to be a semi-liquid greasy or waxy material (*e.g.*, a grease or wax may be made with varying degrees of fluidity, based on the addition of thickeners and may come in the form of a stick or “solid” grease), rather than a durable solid lubricant. As noted by Geib, “[t]he lubricant *should also be soft enough* that it can be removed from the dimples by passing coins” (col. 7, lines 48-50)(emphasis added). Geib discloses a semi-fluid lubricant that is “dragged from the dimples onto the passing coins” and that “[a] portion of this lubricant is then transferred from the coins to the solid surfaces of the

sorting head that engage the coins.” (col. 7, lines 32-36). The principle of operation of Geib is to use a semi-liquid lubricant that is transferred not only to the conveyed coins, but also to surfaces contacted by the coins. Thus, Geib discloses a fluid transfer of the lubricant from one location to another location.

LeClaire, in contrast, discloses a different principle of operation (e.g., forming a “molecular/mechanical interlock” (col. 1, line 28). Thus, the Examiner’s modification to utilize in Geib the tungsten disulphide, disclosed in LeClaire, would change the principle of operation of Geib, which requires a fluid lubricant transfer to and from the coins by and to the sorting head. Accordingly, the teachings of LeClaire are not sufficient to render claims 2, 3, 8 and 9 *prima facie* obvious under 35 U.S.C. § 103. If a proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the reference are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810 (CCPA 1959). Reconsideration and withdrawal of this rejection is requested for at least this reason.

It is further noted that the question of whether a claim limitation is within the level of ordinary skill in the art, whether such assertion is explicit or implied, is not a sufficient basis for concluding that the claimed subject matter would have been obvious under 35 U.S.C. § 103. That which is within the capabilities of one skilled in the art is not synonymous with obviousness. *Ex parte Gerlach*, 212 USPQ 471 (Bd. App. 1980); *Panduit Corp. v. Dennison Mfg. Co.*, 774 F.2d 1082, 1092 fn.16 (Fed. Cir. 1985).

III. THE 35 U.S.C. § 103 REJECTION OF CLAIMS 4 AND 10

Claims 4 and 10 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Geib in view of US 6,428,883 B1 to White. This rejection is traversed. Reconsideration and withdrawal are requested.

Geib is acknowledged not to disclose a lubricant having a thickness of less than about one micron. White is alleged to teach a tungsten disulphide lubricant having a thickness of less than about one micron (citing col. 5, lines 11-21) deposited onto a substrate “for the purpose of enhancing the lubricity of the substrate.” The Examiner alleges that it “would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the lubricant of White into the device of Geib for the purpose of enhancing the lubricity of substrate 12.”

Claims 4 and 10 recite that the solid lubricant of the stationary head “has a thickness of less than about one micron.”

The cited passage of White reveals that “the dry lubricant is usually used in a loose powder form, or mixed with an appropriate liquid lubricant” and that “[i]n embodiments of the present invention, the dry lubricant has a small particle size to permit uniform mixing with the resin/diamond material.” (col. 5, lines 10-14)(emphasis added). White also discloses that “[t]hus, in embodiments, the dry lubricant preferably has an average particle size of from about 0.01 to about 10 microns” and “[m]ore preferably, the average particle size is from about 0.1 to about 5 microns, and more preferably from about 0.5 to about 3 microns” and that “[i]t is particularly preferred that the dry lubricant average particle size is less than about 2 microns.” (col. 5, lines 14-21). White does not disclose or suggest that the dry lubricant “has a thickness of less than about one micron.” Instead, White only discloses that the average particle size of a dry lubricant is within various noted ranges. Despite White’s mention of an “average particle size of from about 0.01 to about 10 microns,” for example, White teaches that the dry lubricant is “mixed into the resin/diamond material.” (col. 4, lines 29-30)(emphasis added). Specifically, White discloses that “compositions for dicing blades are generally known in the art, an exemplary dicing blade according to the present invention contains graphite, phenolic resin, diamond particles, and dry lubricant” and that “[f]or example, a particular dicing blade can include graphite in an amount of about 7.5% by weight, phenolic resin in an amount of about 32.5% by weight, diamond in an amount of about 55.5% by weight, and molybdenum disulfide in an amount of about 4.5% by weight.” (col. 3, line 59 to col. 4, line 10). Thus, the dry lubricant of White is dispersed within the volume of the blade resin/diamond material. In this regard, White notes that “it is believed that too much dry lubricant can deteriorate the blade’s structural properties” and that “if too much dry lubricant is added, the structure may become weaker . . . and the blade may in fact not be able to stay together at the high rotation speeds.” (col. 5, lines 5-10). Thus, White does not disclose or suggest that the dry lubricant is disposed on a surface of the blade, but is rather integrated into the material of the blade.

As to the Examiner’s allegation that it “would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the lubricant of White into the device of Geib for the purpose of enhancing the lubricity of substrate 12,” Applicant submits that such a modification would have changed the principle of operation of Geib. As noted above, Geib does

not disclose or suggest the use of a “durable solid lubricant,” as recited in the claims, but rather discloses a semi-liquid greasy or waxy material and that the principle of operation of Geib is to use a semi-liquid lubricant that may be transferred not only to the conveyed coins, but also to surfaces subsequently contacted by the lubricant-bearing coins. White, in contrast, discloses volumetric integration of a dry lubricant into the material of the substrate. Thus, the Examiner’s suggested modification to utilize White’s dry lubricant in Geib would change the principle of operation of Geib. Accordingly, the teachings of White are not sufficient to render claims 4 and 10 *prima facie* obvious under 35 U.S.C. § 103. As previously noted, if a proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the reference are not sufficient to render the claims *prima facie* obvious. *In re Ratti, supra*. Reconsideration and withdrawal of this rejection is requested for at least this reason.

IV. THE 35 U.S.C. § 103 REJECTION OF CLAIMS 5 AND 11

Claims 5 and 11 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Geib in view of US 4,131,491 to Joseph. This rejection is traversed. Reconsideration and withdrawal are requested.

Geib is acknowledged not to disclose that component 12 is made from a 4140 Alloy prehard steel. Joseph is alleged to teach “machine component 20 constructed of a 4140 Alloy Prehard Steel (column 6, lines 16-27) for the purpose of providing structural integrity to said component” The Examiner alleges that it “would have been obvious to one of ordinary skill in the art at the time the invention was made to construct the machine component of Geib with the steel of Joseph for the purpose of providing structural integrity to the component.”

This allegation is conclusory. Although a prior art device “may be capable of being modified to run the way the apparatus is claimed, there must be a suggestion or motivation in the reference to do so.” See *In re Fritch*, 972 F.2d 1260 (Fed. Cir. 1992). The Examiner must show reasons why a skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would select the elements from the cited prior art references for combination in the manner claimed. *In re Rouffet*, 149 F.3d 1350, 47 USPQ2d 1453 (Fed. Cir. 1998). The showing must be clear and particular. See, e.g., *In re Dembiczak*, 50 USPQ2d

1614, 1617 (Fed. Cir. 1999); *C.R. Bard, Inc. v. M3 Sys., Inc.*, 157 F.3d 1340, 1352 (Fed. Cir. 1998).

The cited passage in Joseph merely indicates that “[a]lloy steels with medium carbon content are the preferred types of steel used for the torsion bars of the present invention” (col. 6, lines 16-18). Such torsion bars are “used for many purposes including the resilient suspension of vehicles on tracks or wheels” (col. 1, lines 6-8). Joseph particularly notes “high speed military or lumber vehicles in off-road environments” (col. 1, lines 10-11). There is no evidence Joseph that the claimed “4140 Alloy Prehard steel” would be suitable for the coin processing application disclosed by Geib.

Accordingly, the Examiner’s burden to set forth a *prima facie* case of obviousness has not been discharged, as broad conclusory statements, standing alone, are not “evidence” supportive of a *prima facie* showing. *McElmurry v. Arkansas Power & Light Co.*, 995 F.2d 1576, 1578 (Fed. Cir. 1993). Reconsideration and withdrawal of this rejection is requested for at least this reason.

V. THE 35 U.S.C. § 103 REJECTION OF CLAIMS 6 AND 12

Claims 6 and 12 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Geib in view of US 5,270,374 to Ratliff. This rejection is traversed. Reconsideration and withdrawal are requested.

Geib is acknowledged not to disclose that component 12 is made from a Nitralloy 135 steel. Ratliff is alleged to teach “machine components constructed of Nitralloy 135 steel (column 6, lines 65-4) for the purpose of providing structural integrity to the component”. The Examiner alleges that it “would have been obvious to one of ordinary skill in the art at the time the invention was made to construct the machine component of Geib with the steel of Ratliff for the purpose of providing structural integrity to the component.”

Claims 6 and 12 both recite that the sorting head comprises “a Nitralloy 135 steel.”

The cited passage of Ratliff states that “[t]he preferred stop-off formulation of Table III was painted onto a section of Nitralloy 135 modified steel and allowed to air dry at room temperature” and that following heat treatment, “the stop-off residue . . . was removed from the heat-treated metal.” Ratliff teaches that “[s]top-offs are typically employed to prevent a predetermined portion of the steel from forming a hardened skin so as to facilitate later

machining operations on the unhardened areas.” (col. 1, lines 60-63). Ratliff also teaches that “[p]revention of case hardening is a matter of preventing nitrogen or carbon from reaching the surface of the steel by providing a physical shield between the steel and the case-hardening atmosphere or environment.” (col. 1, lines 64-67). Contrary to the Examiner’s allegation, there is absolutely no teaching in Ratliff that machine components are constructed of Nitalloy 135 steel “for the purpose of providing structural integrity to the component.” There is no disclosure whatsoever in Ratliff about the “structural integrity” of Nitalloy 135 steel. This passage of Ratliff merely mentioned the results of application of a stop-off to “a section of Nitalloy 135 modified steel”.

The Examiner has, accordingly, failed to discharge his burden to set forth a *prima facie* case of obviousness. The Examiner’s broad conclusory statements, standing alone, are not “evidence” supportive of a *prima facie* showing. *McElmurry v. Arkansas Power & Light Co.*, *supra*. The Examiner must show clear and particular reasons why a skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would select the elements from the cited prior art references for combination in the manner claimed. *See, e.g., In re Rouffet, supra; In re Dembiczak, supra*. Reconsideration and withdrawal of this rejection is requested for at least this reason.

VI. THE 35 U.S.C. § 103 REJECTION OF CLAIM 17

Claim 17 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Geib in view of US 6,790,295 to Kinoshita. Reconsideration and withdrawal are requested.

Geib is acknowledged not to disclose the “act of polishing a first surface after machining” and Kinoshita is alleged to teach “a slide surface that has lubricant-retaining dimples (column 1, lines 55-59) and is polished after being machined (column 2, lines 47-51) for the purpose of enhancing the lubricity of the surface.” The Examiner alleges that it “would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the acts of machining and polishing of Kinoshita into the manufacturing process of the device of Geib for the purpose of enhancing the lubricity of slide surface of disc 12.”

Claim 17 recites a method of constructing a sorting head for a disc-type coin sorter comprising the acts of “providing a generally disc-shaped metal object,” “machining a plurality of shaped regions in a first surface of the object,” “forming a plurality of dimples in the first

surface of the object,” “depositing a durable solid lubricant on the first surface of the object,” and “polishing the first surface of the object after machining.”

Kinoshita relates to sliding surfaces of piston pins of vehicle engines (col. 1, lines 12-42). Kinoshita discloses a “method of plating the surfaces (outer surfaces), as slide surfaces, of piston pins with chromium, and a method of treating piston pins by shot peening after carburizing” and “a method of treating chromium-plated cylinders and piston rings by electrolytic etching to form groove-like oil retainers and thereby prevent seizure.” (col. 1, lines 18-24). Kinoshita refers to “lubricant storing recesses” (col. 1, line 37) and “lubricant retainers” (*see, e.g.*, col. 3, lines 27-29). Contextually, the lubricant to which Kinoshita refers is clearly the piston lubricant (*i.e.*, motor oil).

As noted above, Geib does not disclose or suggest the use of a “durable solid lubricant” and does not teach or suggest an act of “depositing a durable solid lubricant on the first surface of the object,” as claimed. Instead, the lubricant disclosed by Geib appears to be a semi-liquid greasy or waxy material (*e.g.*, a grease or wax may be made with varying degrees of fluidity, based on the addition of thickeners and may come in the form of a stick or “solid” grease), rather than a durable solid lubricant. As noted by Geib, “[t]he lubricant *should also be soft enough* that it can be removed from the dimples by passing coins” (col. 7, lines 48-50)(emphasis added). Geib discloses a semi-fluid lubricant that is “dragged from the dimples onto the passing coins” and that “[a] portion of this lubricant is then transferred from the coins to the solid surfaces of the sorting head that engage the coins.” (col. 7, lines 32-36). The principle of operation of Geib is to use a semi-liquid lubricant that is transferred not only to the conveyed coins, but also to surfaces contacted by the coins. Thus, Geib discloses a fluid transfer of the lubricant from one location to another location. This is precisely what Kinoshita appears to teach. Kinoshita discloses the formation of lubricant storing recesses into which and from which the lubricant (*e.g.*, motor oil) can flow to prevent seizure.

Thus, neither Geib nor Kinoshita disclose “depositing a durable solid lubricant on the first surface of the object.” To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981 (CCPA 1974). “All words in a claim must be considered in judging the patentability of that claim against the prior art”. *In re Wilson*, 424 F.2d 1382, 1385 (CCPA 1970); *see also In re Ochiai*, 71

F.3d 1565, 1572 (Fed. Cir. 1995)(*stating* “[w]hen evaluating the scope of a claim, every limitation in the claim must be considered”).

In view of the above, it is submitted that the Examiner failed to establish a *prima facie* case of obviousness under 35 U.S.C. § 103(a), as the applied references fail to teach or suggest each and every element of the claim. Reconsideration and withdrawal of this 35 U.S.C. § 103 rejection is requested for at least this reason.

VII. THE 35 U.S.C. § 103 REJECTION OF CLAIMS 19 AND 20

Claims 19-20 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Geib in view of Kinoshita, as applied to claim 17, above, and further in view of LeClaire. Reconsideration and withdrawal are requested.

Geib and Kinoshita are acknowledged not to disclose “a solid lubricant comprising tungsten disulphide particles that correspond to the size of the dimples.” LeClaire is alleged to teach the application of a lubricant comprising tungsten disulphide particles 30 onto ferrous and non-ferrous substrates (column 1, lines 18-30) for the purpose of enhancing the lubricity of the substrate.” The Examiner alleges that “[s]aid particles are deposited into dimples 28 that are sized to correspond to said particles (see Figure 3)” and that it “would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the tungsten disulphide lubricant of LeClaire into the device of Geib for the purpose of enhancing the lubricity of substrate 12.”

Claim 19 recites a method of constructing a sorting head for a disc-type coin sorter comprising the acts of “providing a generally disc-shaped metal object,” “machining a plurality of shaped regions in a first surface of the object,” “forming a plurality of dimples in the first surface of the object,” “depositing a durable solid lubricant on the first surface of the object,” and “polishing the first surface of the object after machining.” Claim 19 further recites that “the solid lubricant comprises tungsten disulphide particles.”

Claim 20 recites, further to claim 19, that “the dimples are sized to correspond to a size of said tungsten disulphide particles.”

As noted above, Geib (and Kinoshita) relate to semi-fluid and fluid lubricants, respectively. LeClaire, in contrast, discloses a different principle of operation (*e.g.*, forming a “molecular/mechanical interlock” (col. 1, line 28). Thus, the Examiner’s modification to

incorporate with Geib the act of “depositing a durable solid lubricant on the first surface of the object,” wherein the durable solid lubricant is a tungsten disulphide, disclosed in LeClaire, would change the principle of operation of Geib, which requires a fluid lubricant transfer to and from the coins by and to the sorting head. Accordingly, the teachings of LeClaire are not sufficient to render claims 19 and 20 *prima facie* obvious under 35 U.S.C. § 103. If a proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the reference are not sufficient to render the claims *prima facie* obvious. *In re Ratti, supra*. Reconsideration and withdrawal of this rejection is requested for at least this reason.

It is again noted that the question of whether a claim limitation is within the level of ordinary skill in the art, whether such assertion is explicit or implied, is not a sufficient basis for concluding that the claimed subject matter would have been obvious under 35 U.S.C. § 103. That which is within the capabilities of one skilled in the art is not synonymous with obviousness. *Ex parte Gerlach, supra; Panduit Corp. v. Dennison Mfg. Co., supra*.

VIII. THE 35 U.S.C. § 103 REJECTION OF CLAIM 18

Claim 18 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Geib in view of Ratliff. Reconsideration and withdrawal are requested.

Geib was acknowledged not to disclose “the act of subjecting the disc-shaped metal object to a nitride and heat treatment during the manufacturing process” and the Examiner cited Ratliff for teaching “the act of subjecting a metal object to a nitride and heat treatment process during a manufacturing process for the purpose of enhancing the surface hardness of the object.” The Examiner alleges that it “would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the nitriding and heating acts of Ratcliff into the manufacturing process of Geib for the purpose of enhancing the surface hardness of the object.”

Claim 18 recites, further to claim 16, the acts of “subjecting the object to a nitride and heat treatment process after machining and before the acts of forming the plurality of dimples in the first surface of the object and depositing of the durable solid lubricant on the first surface of the object.”

As noted above, Geib does not disclose or suggest the use of a “durable solid lubricant” and does not teach or suggest an act of “depositing a durable solid lubricant on the first surface

of the object,” as claimed. Instead, Geib discloses application of a semi-liquid greasy or waxy material. As noted by Geib, “[t]he lubricant *should also be soft enough* that it can be removed from the dimples by passing coins” (col. 7, lines 48-50)(emphasis added). As also noted above, Geib discloses that this semi-fluid lubricant is “dragged from the dimples onto the passing coins” and that “[a] portion of this lubricant is then transferred from the coins to the solid surfaces of the sorting head that engage the coins.” (col. 7, lines 32-36).

Ratliff is unable to make up for this deficiency of Geib and fails to disclose the act of “depositing a durable solid lubricant on the first surface of the object,” as claimed. To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka, supra*. It is therefore submitted that the Examiner has not set forth a *prima facie* case of obviousness under 35 U.S.C. § 103(a), as Geib and Ratliff fail to teach or suggest, singly or in combination, each and every element of the claim.

Reconsideration and withdrawal of this 35 U.S.C. § 103 rejection is requested for at least this reason.

IX. THE 35 U.S.C. § 103 REJECTION OF CLAIM 21

Claim 21 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Geib in view of Kinoshita. Reconsideration and withdrawal are requested.

Geib is acknowledged not to disclose the “act of polishing a first surface of the metal object after depositing a solid lubricant” and Kinoshita is alleged to teach “the act of depositing a solid lubricant on a metal object (i.e., chromium plating – see column 2, lines 47-51) and a subsequent act of polishing said solid lubricant (column 2, lines 47-51 and column 3, lines 47-54) for the purpose of enhancing the lubricity of the solid lubricant.”

The Examiner alleges it “would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the depositing and polishing acts of Kinoshita into the manufacturing process of Geib for the purpose of enhancing the lubricity of the object surface.”

Claim 21 recites, further to claim 16, the act of “polishing the first surface of the object after depositing the solid lubricant.”

As noted above, Geib does not disclose or suggest the use of a “durable solid lubricant” and does not teach or suggest an act of “depositing a durable solid lubricant on the first surface

of the object,” as claimed. Instead, Geib discloses application of a semi-liquid greasy or waxy material. As noted by Geib, “[t]he lubricant *should also be soft enough* that it can be removed from the dimples by passing coins” (col. 7, lines 48-50)(emphasis added). As also noted above, Geib discloses that this semi-fluid lubricant is “dragged from the dimples onto the passing coins” and that “[a] portion of this lubricant is then transferred from the coins to the solid surfaces of the sorting head that engage the coins.” (col. 7, lines 32-36).

Kinoshita is unable to make up for this deficiency of Geib and fails to disclose the act of “depositing a durable solid lubricant on the first surface of the object,” as claimed. The Examiner’s allegation that Kinoshita’s act of forming a chromium plating constitutes “depositing a durable solid lubricant on the first surface of the object” is flatly incorrect and unsubstantiated, as is the Examiner’s subsequent allegation that any act of polishing such chromium plating constitutes “polishing the first surface of the object after depositing the solid lubricant.” As previously noted, even if it is assumed that the claimed opening is not clearly defined by applicant in the specification, the words of a claim must be given their plain meaning (*i.e.*, they must be read as they would be interpreted by those of ordinary skill in the art). *In re Sneed*, 710 F.2d 1544, 218 USPQ (Fed. Cir. 1983). The “broadest reasonable interpretation” of the claims permitted by law must be consistent with “the interpretation that those skilled in the art would reach.” *In re Cortright*, 165 F.3d 1353, 1359, 49 USPQ2d 1464, 1468 (Fed. Cir. 1999). “Claims are not to be read in a vacuum, and limitations therein are to be interpreted in light of the specification in giving them their ‘broadest reasonable interpretation’.” *In re Marosi*, 710 F.2d 799, 802 (Fed. Cir. 1983). It is respectfully submitted that one skilled in the art would not have reasonably interpreted “chromium plating” as the disclosed and claimed “durable solid lubricant” in light of the specification. Further, to the extent that the Examiner may attempt to later claim that “chromium plating” is somehow an equivalent to the disclosed and claimed “durable solid lubricant,” Applicant notes that in order for the Examiner to properly rely on equivalence as a rationale supporting an obviousness rejection, the equivalency must be recognized in the prior art, which has not been established. *In re Ruff*, 256 F.2d 590 (CCPA 1958). To the extent that the Examiner may later assert equivalency of these elements, Applicant respectfully requests that the Examiner produce evidence of recognition of the asserted equivalency in the prior art in support of the Examiner’s contentions.



To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka, supra*. It is therefore submitted that, for at least this reason, the Examiner has not set forth a *prima facie* case of obviousness under 35 U.S.C. § 103(a), as Geib and Kinoshita fail to teach or suggest, singly or in combination, each and every element of claim 21. Neither Geib nor Kinoshita teach or suggest, singly or in combination, the acts of “depositing a durable solid lubricant on the first surface of the object” and “polishing the first surface of the object after depositing the solid lubricant.” Reconsideration and withdrawal of this 35 U.S.C. § 103 rejection is requested for at least this reason.

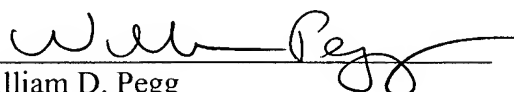
X. Conclusion

If there are any matters which may be resolved or clarified through a telephone interview, the Examiner is respectfully requested to contact the undersigned attorney at the number indicated.

The Applicants submit that the claims are in a condition for allowance and action toward that end is earnestly solicited. A check in the amount of \$200.00 is enclosed to cover the extra claim fee. Should any additional fees be required (except for payment of the issue fee), the Commissioner is authorized to deduct the fees from Jenkins & Gilchrist, P.C. Deposit Account No. 10-0447, Order No. 47171-00408USPT.

Respectfully submitted,

February 27, 2007
~~January 2, 2007~~
Date


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